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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Thirty-seventh Meeting
Montreal, 17-19 July 2002

PROJECT PROPOSAL: CHILE

This document consists of the comments and recommendation of the Fund Secretariat on the following project proposal:

Fumigant:

- Phase-out of methyl bromide in tomatoes and peppers production — World Bank

PROJECT EVALUATION SHEET
CHILE

SECTOR: Fumigant ODS use in sector (2000): 242.5 ODP tonnes

Sub-sector cost-effectiveness thresholds: n/a

Project Titles:

(a) Phase-out of methyl bromide in tomatoes and peppers production

Project Data	**Methyl bromide**
Enterprise consumption (ODP tonnes)	
Project impact (ODP tonnes)	121.80
Project duration (months)	48
Initial amount requested (US $)	1,963,173
Final project cost (US $):	
Incremental capital cost (a)	1,830,869
Contingency cost (b)	132,304
Incremental operating cost (c)	
Total project cost (a+b+c)	1,963,173
Local ownership (%)	100%
Export component (%)	0%
Amount requested (US $)	1,963,173
Cost effectiveness (US $/kg.)	16.12
Counterpart funding confirmed?	
National coordinating agency	CONAMA
Implementing agency	World Bank

Secretariat's Recommendations	
Amount recommended (US $)	
Project impact (ODP tonnes)	
Cost effectiveness (US $/kg)	
Implementing agency support cost (US $)	
Total cost to Multilateral Fund (US $)	

PROJECT DESCRIPTION

1. The project proposal was first submitted for the consideration by the Executive Committee at its 36th Meeting. However, prior to the Meeting, the Secretariat and the World Bank have agreed that the project proposal should be deferred (UNEP/OzL.Pro/ExCom/36/25 and Corr.1).

2. The project is to phase out 126.3 ODP tonnes of methyl bromide (MB) used for soil fumigation in tomato and pepper crops, produced in greenhouses and open-fields, equivalent to 60 per cent of the total consumption in the country, excluding essential and critical uses of MB. The total production of tomatoes and peppers is for local consumption.

3. The use of MB will be replaced with alternative chemicals (metam sodium) and steam pasteurisation of substrates used in greenhouses for the production of seedlings. These technologies have been selected on the basis of the results from the demonstration project on alternatives to the use of MB in horticulture approved by the Executive Committee at its 25th Meeting (World Bank, US $348,130).

4. The use of metam sodium requires modification of the irrigation systems currently available in greenhouses and injection systems for open field production without irrigation systems. The steam technology requires 12 steam generators (at a cost of about US $1.5 million, as submitted to the 36th Meeting). The project also includes a training programme (US $1,228,324). Incremental operating costs have been estimated at about US $335,926. The cost effectiveness of the project, as submitted, is US $21.98/kg. The estimated time for the implementation of the project is 4 years.

5. The national agencies responsible for the implementation of the project are the Agricultural Research Institute (INIA), the Agricultural Development Institute (INDAP), private extension agents and other institutions. Farmer associations will have to be established and/or promoted to utilise the steaming and metam sodium dosing equipment. The Ozone Unit, at the National Commission of the Environment, will be in charge of co-ordinating and monitoring all the activities related to the Montreal Protocol.

6. The Government of Chile will be responsible for providing the legal framework for phasing out MB in tomato and pepper crops, the infrastructure for reaching the farmers involved and the necessary institutional support for implementing and following up on the project.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

7. The Secretariat discussed with the World Bank the level of consumption of MB in Chile eligible for funding from the Multilateral Fund. At its 32nd Meeting, the Executive Committee approved an investment project for the phase out of MB in the tree replant and tree nursery

sectors in Chile, with a total phase out of 76.2 ODP tonnes. The project proposal was approved together with an agreement between the Government of Chile and the Executive Committee, through which, among others, Chile commits to reduce its total national consumption of controlled uses of methyl bromide to no more than the following levels: 198 ODP tonnes by 2002; 170 ODP tonnes by 2003 and 121.8 ODP tonnes by 2006 (UNEP/OzL.Pro/ExCom/32/44, Annex IX).

8. In accordance with the agreement, the total amount of MB in Chile eligible for funding from the Multilateral Fund would be 121.8 ODP tonnes. Therefore, the eligible incremental cost of the project should be based on the agreed maximum remaining consumption of 121.8 ODP tonnes.

9. The Secretariat pointed out that sterilisation of substrate for greenhouse or seedling production is an unusual practice world-wide because of its higher cost compared with artificial media and the greater incidence of problems associated with disease. Furthermore, soil used as the media can be sterilised with alternative chemicals (i.e., 1-3 dichloropropane or metam sodium), which would be cheaper than the proposed steam sterilisers.

10. Subsequently, the World Bank advised the Secretariat that "although metam sodium and 1-3 D are registered for use in Chile, these technologies pose environmental and health risks. These substrates need to be ventilated and mobilised in spaces that are frequently closed and where the potential exposure of operators to the chemicals would be too high. The use of metam sodium on substrates is not normally regarded as appropriate because the organic materials can bind metam sodium breakdown products and the treatment can leave phytotoxic residues in the substrate (which take a long time to degrade). Commercial 'clean' substrates in Chile are very expensive, which is why growers use MB at present. Steam remains the most appropriate MB alternative".

11. The Secretariat also noted that if the farmers will still consider using steam, there are steam generators available that can provide the treatment required at a much lower cost than that in the project (US $30,000/unit in the original project). The World Bank noted that the steam generator proposed by the Secretariat does not meet the necessary specification for the circumstances in Chile (high temperature, high pressure, steam capacity and mobility), and does not include other essential elements to substitute for MB on a group of farms. Based on these considerations and on the results from the demonstration project, the cost for a steam generator was US $15,000.

12. The Secretariat and the World Bank discussed issues related to level of operating costs requested (US $335,926), on the basis of the surface area fumigated with MB, the average dosage used for chemicals, labour costs and operating costs of equipment. Taking into consideration that sensitivity associated with incremental operating costs/savings (small changes in any parameter used result in either costs or savings), the World Bank agreed not to request these costs.

13. The Secretariat and the World Bank also discussed issues related to the cost for training programme (US $1,228,300) taking into consideration that the project is only for replacing the soil fumigant which is applied only once a year, for a short period of time and that the surface

area where MB is applied is small (1,000 ha). The Secretariat was advised that the size of the training programme was estimated considering that the production of tomatoes and peppers in Chile where MB is used is distributed in 7 regions, and is being used by about 2,500-3,000 farmers; greenhouse tomatoes are cropped two times a year, while open field tomatoes are grown once a year. The cropping seasons vary significantly between the regions (for example, soil in greenhouses is sterilised from December to January in Regions I and III; from July to August in Region IV; from August to September in Region V and the Metropolitan Region; from September to October in Region VI and from October to November in Region VII). The estimated number of staff to be involved as trainers are 6 extension agents (who will cover more than one region) and 8 specialists. The World Bank also agreed to reduce the training programme cost to US $507,824.

14. The total project cost was agreed at US $1,963,173 which covers the equipment, training and technical assistance requirements for achieving the phase out of 126.3 ODP tonnes of MB. The Government of Chile is requesting funding level for 121.8 tonnes which represents the remaining MB consumption eligible for funding (the additional 4.5 ODP tonnes will be phased out by the Government without the assistance from the Multilateral Fund).

15. The World Bank assisted the Government of Chile in drafting a proposal for a revised agreement between the Government and the Executive Committee with the commitments proposed and action plan for the phase out of MB in tomato and pepper crops in Chile, taking into account the current agreement covering the phase out of MB in the tree replant and tree nursery sectors, approved at the 32nd Meeting of the Executive Committee. The draft agreement is attached to this document.

RECOMMENDATION

16. The Executive Committee may wish to consider the project proposal in light of the above comments and taking into consideration that this project will result in the total phase out of MB in the country, excluding quarantine and pre-shipment applications (QPS), and that the Government of Chile will not request further assistance from the Multilateral Fund to phase out MB excluding QPS applications.

Annex I

AGREED CONDITIONS FOR PHASE-OUT OF METHYL BROMIDE IN CHILE

(DRAFT)

1. The Executive Committee:

   (a) at its 32nd Meeting, approved US $805,000 as the total funds that will be available to Chile to achieve the complete phase out of methyl bromide (MB) in the tree replant and tree nursery sectors (76.2 ODP tonnes);

   (b) at its 37th Meeting, approved in principle an additional amount of US $1,963,173 as the total funds that will be available to Chile to achieve the complete phase out of MB used in tomato and pepper crops, excluding quarantine and pre-shipment applications (additional 121.8 ODP tonnes).

2. As reported to the Ozone Secretariat, the MB baseline for Chile has been established at 212.5 ODP tonnes. Chile has also reported a MB consumption of 242.52 tons ODP for the year 2000, excluding quarantine and pre-shipment applications. As established by the Montreal Protocol, Chile must reduce its consumption of MB to 212.5 ODP tonnes by 2002[1], to achieve compliance with the Montreal Protocol's 2002 freeze obligation, and to no more than 170.0 ODP tonnes in 2005 to achieve compliance with the Protocol 20 per cent reduction[2].

3. Reductions in accordance with the terms of the above mentioned projects, other commitments presented in the projects documents, will ensure that Chile will meet the reduction schedule listed below. In that regard Chile commits, through the implementation of the projects, to reduce total national consumption of controlled uses of MB to no more than the following levels of consumption in the years listed below, as a consequence of the approved projects:

Year	MB phase out per year (ODP tonnes)			Maximum national MB consumption excluding QPS applications (ODP tonnes)*
	Tree replant and tree nursery (UNDP)	Tomato and pepper crops (World Bank)*	Total phase out per year	
2002			0	198
2003	28		28	170
2004		8	8	162
2006	48.2	33.8	82	80
2008		80	80	0
Total	76.2	121.8	198	

(*) Additional ODP tonnes to be phased out without the assistance from the Multilateral Fund under the MP control schedules.

[1] Government of Chile will be in communication with the Ozone Secretariat to correct the information on baseline consumption. According to GOC the correct amount is 221.5 instead of 212.5.
[2] This level would also be corrected based on the right baseline information.

4. The projects will phase out all remaining uses of MB in the tree replant and tree nursery sectors and in tomato and pepper crops in Chile, excluding quarantine and pre-shipment applications. Chile commits to permanently sustain the consumption levels indicated above through the use of import restrictions and other policies it may deem necessary. UNDP and the World Bank shall report back annually to the Executive Committee on the progress achieved in meeting the MB reductions required.

5. In case of unjustified delays, UNDP and/or the World Bank will inform the Executive Committee and will cancel any further release of funds until all problems are solved and the schedule is brought back on track. If unjustified delays continue, the projects may be cancelled. If phase out is not achieved in one project and the country as a consequence fails to meet the overall maximum MB consumption limit, the project which did meet its individual target will continue to receive funding.

6. The Government of Chile, in agreement with UNDP and the World Bank, will have the flexibility in organising and implementing the projects' components which it deems more important in order to meet MB phase-out commitments noted above. UNDP and the World Bank agree to manage the funding for the project in a manner designed to ensure the achievement of the specific MB reductions agreed.

7. These agreed conditions between the Government of Chile and the Executive Committee have taken into account the already approved MB phase-out projects in tree replant and tree nursery; and therefore, this supersedes the agreed conditions at the 32nd Meeting of the Executive Committee.

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